

CALIFORNIA ENERGY COMMISSION1516 NINTH STREET
SACRAMENTO, CA 95814-5512

**STATE OF CALIFORNIA
ENERGY RESOURCES CONSERVATION
AND DEVELOPMENT COMMISSION**

In the Matter of: CALPINE KING CITY COGEN CALPINE KING CITY COGEN, LLC <hr style="width: 40%; margin-left: 0;"/>)))))))	Docket No. 85-AFC-5C Order No. 05-0713-01(c) ORDER APPROVING MODIFICATIONS TO AIR EMISSION MONITORING REQUIREMENTS
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CALPINE KING CITY COGEN, LLC, the owner/operators of the CALPINE KING CITY COGEN Project, has requested to modify the air quality conditions of certification by making editorial changes that would align the decision with Monterey Bay Unified Air Pollution Control District's recently drafted revisions to the project's Permit to Operate and Title V Operating Permit. The District is expected to finalize and approve the permits by July 22, 2005.

STAFF RECOMMENDATION

The Energy Commission staff reviewed the petition and finds that it complies with the requirements of Title 20, Section 1769(a) of the California Code of Regulations and recommends approval of the CALPINE KING CITY COGEN, LLC petition to modify the CALPINE KING CITY COGEN Project and amend related Conditions of Certification.

COMMISSION FINDINGS

Based on staff's analysis, the Commission concludes that the proposed changes will not result in any significant impact to public health and safety, or the environment. The Commission finds that:

- The petition meets all the filing criteria of Title 20, section 1769(a) of the California Code of Regulations concerning post-certification project modifications.
- The modification will not change the findings in the Commission's Final Decision pursuant to Title 20, section 1755.
- The project will remain in compliance with all applicable laws, ordinances, regulations, and standards, subject to the provisions of Public Resources Code section 25525;
- The Change will be beneficial to both the public and the project owner because it would result in the air emissions standards to the project conforming with standard practices, and to

the project owner due to an extension in the timeframe for submission of annual source test reports; and

- There has been a substantial change in circumstances since the Commission certification justifying the change and that the change is based on information that was not available to the parties prior to Commission certification in that it was not known that the air district would require these modifications to their permits.

CONCLUSION AND ORDER

The California Energy Commission hereby adopts Staff's recommendations and approves the following changes to the CALPINE KING CITY COGEN Project's Decision. New language is shown as **bold and double-underlined** and deleted language is shown in ~~strikeout~~:

AQ-6: Emissions of carbon monoxide in the turbine exhaust discharge to the atmosphere shall not exceed 10 ppmv calculated **as a three hour rolling clock average** at 15 percent O₂, dry.

AQ-11: DOC Condition 2: While firing on natural gas the emissions of oxides of nitrogen, as NO₂, in the turbine exhaust discharged to the atmosphere shall not exceed 9 ppmvd, calculated **as a clock hour average** at 15 percent O₂ dry.

AQ-12: DOC Condition 3: Emissions of ammonia in the turbine exhaust discharged to the atmosphere shall not exceed 10 ppmv calculated **as a three hour rolling clock average** at 15 percent O₂, dry.

AQ-15: DOC Condition 6: While firing on No.2 fuel oil the emissions of oxides of nitrogen, as NO₂, in the turbine exhaust discharged to the atmosphere shall not exceed 15 ppmvd, calculated **as a clock hour average** at 15 percent O₂ dry.

AQ-29: DOC Condition 20: ~~A continuous monitoring system must be installed and operated to monitor and record the mole ratio of injected ammonia to gas turbine outlet (HRSG) NO_x. This system must be accurate to within +/- 5 percent.~~ **The ammonia emissions shall be monitored by the using the following ammonia slip calculation:**

$$\text{NH}_3 \text{ slip (ppmvd @ 15\% O}_2\text{)} = ((\text{NH}_3 \text{ fed ppm} - (\text{NO}_x \text{ in ppm} - \text{NO}_x \text{ out ppm})) * ((20.9 - 15)/(20.9 - \text{O}_2))) / * b$$

Where:

$$\text{NH}_3 \text{ fed in ppm} = ((\text{NH}_3 \text{ injection rate, lb/hr} * a) / (Q * F_d * 4.4096\text{E-}8)) / ((20.9 - \text{O}_2\%) / 20.9)$$

4.4096E-8 = (K-factor constant) corrects for the molecular weight of ammonia

a = Ammonia Concentration (in % by weight/100)

b = Correction Factor based on source test data

Q = Fuel Flow mmbtu/hr

Fd = 8710 scf/mmbtu

AQ-34: ~~Within 60 days after achieving the maximum turbine operating conditions, but not later than 180 days after initial start up, performance tests shall be conducted~~ **An annual compliance test shall be conducted prior to January 1 of each year** in accordance with the MBUAPCD test procedutes, and the written results of the compliance test shall be provided to the District within ~~30~~ **sixty** days after testing.

f. ~~Non-methane hydrocarbon~~ **Volatile Organic Compounds:** ppm and lb/hr.

Verification: The project owner shall submit for approval a performance test protocol to the MBUAPCD and CEC staff 30 days before beginning testing of the gas turbine. The project owner shall submit to the MBUAPD and CEC staff a written report on the results of such performance tests within ~~30~~ **sixty** days after testing.

AQ-36: The project owner shall conduct quarterly tests in the first year, and on an ~~semi-~~ annual basis to determine turbine stack discharge ammonia emissions. Tests shall be conducted in accordance with MBUAPCD test procedures and the District shall be notified at least 7 days prior to testing. The test results shall be submitted to the District within ~~thirty~~ **sixty** days after testing.

1-53. ~~The total quarterly and annual emissions from operation of all fuel fired equipment at this source shall not exceed the following limits while firing natural gas:~~
Cumulative emissions, including emissions generated during Start-ups and Shutdown, from all equipment at Calpine King City Cogen, LLC and the Gilroy Energy Center, LLC shall not exceed the following quarterly and annual limits:

	NOx (lb.)	CO (lb.)	PM10 (lb.)	VOC (lb.)	SO2 (lb.)
1st Quarter	72,452	58,445	12,071	4,762	1,748
2nd Quarter	73,178	59,095	12,204	4,815	1,768
3rd Quarter	73,905	59,744	12,339	4,868	1,787
4th Quarter	73,905	59,744	12,339	4,868	1,787
Annual	293,440	237,028	48,953	19,313	7,090

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Note: During periods of oil firing as allowed for on the permits for the Frame 7 Turbine and the Boilers, the allowable emissions are increased by the incremental hourly limit for oil firing versus the natural gas hourly limit for all hours the equipment was actually operated on fuel oil.

IT IS SO ORDERED.

Date: July 13, 2005

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Original Signed By
JOSEPH DESMOND
Chairman